

Amendments to the Claims

1. *(Cancelled)*

2. *(Currently Amended)* ~~A magnetoresistive memory device (30) according to claim 1;~~
A magnetoresistive memory device comprising an array of magnetoresistive memory elements and at least one magnetic field sensor element, wherein the magnetoresistive memory device comprises a partial or non-homogeneous shielding means so as to shield the array of magnetoresistive memory elements differently from an external magnetic field than the at least one magnetic field sensor element, there being a shielding difference of at least 5%; and

wherein the at least one magnetic field sensor element ~~(32)~~ is shielded with first shielding means ~~(44)~~ having a first magnetic field reduction ratio, and the array ~~(20)~~ of magnetoresistive memory elements ~~(10)~~ is provided with second shielding means ~~(44)~~ having a second magnetic field reduction ratio, the second magnetic field reduction ratio being smaller than the first magnetic field reduction ratio.

3. *(Currently Amended)* ~~A magnetoresistive memory device (30) according to claim 2,~~
wherein the first magnetic field reduction ratio is 1:1.

4. *(Currently Amended)* ~~A magnetoresistive memory device (20) according to claim 1;~~
A magnetoresistive memory device according claim 2, wherein the array ~~(20)~~ of magnetoresistive memory elements ~~(10)~~ and the at least one magnetic field sensor element ~~(32)~~ are integrated monolithically on a single chip.

5. *(Currently Amended)* ~~A magnetoresistive memory device (30) according to claim 1;~~
A magnetoresistive memory device according claim 2, wherein the array ~~(20)~~ of magnetoresistive memory elements ~~(10)~~ and the at least one magnetic field sensor element ~~(32)~~ are located on separate dies in a single package.

6. *(Currently Amended)* ~~A magnetoresistive memory device (30) according to claim 1;~~
A magnetoresistive memory device according claim 2, wherein the array ~~(20)~~ of

magnetoresistive memory elements ~~(10)~~ and the at least one magnetic field sensor element ~~(32)~~ are located on separate dies in separate packages.

7. *(Currently Amended)* A method for measuring an external magnetic field present at an array ~~(20)~~ of magnetoresistive memory elements ~~(10)~~, comprising shielding a magnetic field sensor element ~~(32)~~ with a first shielding means ~~(40)~~ having a first magnetic field reduction ratio, shielding the array ~~(20)~~ of magnetoresistive memory elements ~~(10)~~ with a second shielding means ~~(41)~~ having a second magnetic field reduction ratio, there being a shielding difference of at least 5% between the first and the second magnetic field reduction ratio, and determining the external magnetic field value at the array ~~(20)~~ of magnetoresistive memory elements ~~(10)~~ based on the knowledge of the first and second magnetic field reduction ratio.

8. *(Original)* A method according to claim 7, wherein the second magnetic field reduction ratio is smaller than the first magnetic field reduction ratio.

9. *(Original)* A method according to claim 7, wherein a relationship between the first and second magnetic field reduction ratio is constant for an external magnetic field range.